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Question 9

Section 5.0 - If the West has the most need for NPA Relief Planning over the next 2 years, why is it the last region to be transitioned?

Answer:

Mitretek recognizes that the specific transition of CO Code Administration functions, including code administration and NPA relief planning, will be determined in close coordination with the NANC's COCA Transition Planning Working Group. Mitretek's ordering of the CO Code Administration Centers implementation was determined primarily in an attempt to minimize the impact on NPA relief planning activities already underway. The schedule of CO Code Administration Center start dates, contained on proposal pages 347 through 351 are:

- Midwest MCAC 1 January 1998
- Eastern MCAC 1 April 1998
- Mountain MCAC 1 July 1998
- Western MCAC 1 October 1998
- Southern MCAC 1 January 1999

We have assumed a 1 July 1997 selection by the FCC (all dates are relative to that selection date).

Mitretek is willing to consider with the COCA Transition Planning Working Group the order in which the CO Code Administration Centers are implemented.

Question 10

Section 5.0 - The respondent references and places great weight on the numbering experience it can provide, and particularly on the experience of specific individuals who will be part of the new NANP Administration or its subcontractors. What assurances can the respondent provide that these individuals, as well as other experienced personnel, will remain on the staff of the new NANP Administration over the initial five year contract period?

Answer:

[redacted]

Reflective of the extent of the Mitretek commitment, as well as the personal commitment of the individual staff involved, Mitretek Proposal Section 3 contains a "Commitment Letter" from each of the staff named to specific NANP Administration positions. The letter which is addressed to NANC Chairman Alan Hasselwander, is signed by each staff, as well as the Mitretek Corporate Officer that can ensure that the commitment is honored from a corporate perspective.

[redacted]

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[redacted]

Proposed key personnel clause:

Prior to diverting any of the specified individuals to other programs, Mitretek shall notify the NANC, reasonably in advance, of the proposed change in Key Personnel and shall submit justification, including proposed substitutions, in sufficient detail to permit evaluation of the impact on the program. No diversion of staff shall be made by Mitretek without the consent of the NANC.

Question 11

Section 5.2, Page 246 - Elaborate on your more advanced forecasting techniques and models and how it will improve the NPA relief planning process.

Answer:

The NPA exhaust forecasting challenge is similar to the general problem of long term network planning: demand for resources must be anticipated long enough in advance to allow the resources to be provisioned in time. The time delay in resource provisioning in this case is the NPA relief planning cycle and the implementation time of the carriers. The requirement on the forecasting system is to project NPA exhaust far enough in advance to allow the relief process to function as designed.

As with any forecasting system, the future demand is uncertain and is affected by many factors. The qualities and capabilities of any model of future demand must address the following issues:

1. A forecasting system requires the appropriate level of historical data to operate properly. The basis of NPA exhaust prediction is the COCUS, which provides a count of the CO codes in use for the current year and a projection of the codes required for the next six years. The survey is submitted once each year by the companies that are actual code holders in the NPA being surveyed. The current NANP Administration then predicts the exhaust date for each NPA and publishes the results. More data

points within the year would improve the accuracy of the forecast and would react more quickly to new trends.

2. Demand can accrue from normal growth. The forecasting system must be able to extract the nature of this growth from historical data. In many systems, this growth is not linear (e.g., population growth is often exponential, doubling in a fixed number of years). For these systems, linear projections will always underestimate the future demand until it is too late to react. The prediction function used in the model must be flexible enough to handle a wide range of growth situations.
3. There are some historical data points that either resulted from known one-time events or were anomalies and not indicative of the general growth trend. These data points must be removed from the historical set before the parameters of the growth prediction function are determined. The model must use mathematical techniques to identify these "outlier" data points and not require intervention by the user.
4. The nature of the demand growth may change over time. While enough history must be used to characterize a trend, too much history will keep the model from reacting to changes and identifying new trends. The method of handling historical data must be flexible in a model; the best parameters to use for a specific problem must be determined on a case-by-case basis.

Mitretek's forecast model has features that implement all of the above required capabilities. The combining of the traditional NANPA and COCA functions allows a more proactive approach to be taken to exhaust prediction. Mitretek's CO Code database will

contain current and historical information on the number of codes utilized in each NPA. At any given time, a six year projection based on the most current COCUS will also be available. Mitretek's analytic forecasting model can be run weekly (or even daily) as new assignment data is entered into the database. In addition, if the guidelines allowed, new forecast data should be obtained from a carrier when it is requesting its first code or when its actual code assignments during a year exceed its forecast for that year. In this way, the forecasting model can flag impending exhaust situations when they first manifest themselves instead of discovering a jeopardy situation already in progress at the annual COCUS review.

The Mitretek model will have several prediction functions built-in to identify a wide range of trend types. At a minimum, linear, higher order polynomial, and exponential functions will be used. Each individual run of the model will use a particular prediction function and historical data weighting data function. The best parameters for the prediction function for each NPA will be determined using autocorrelation techniques. Sensitivity runs will be made using different prediction functions; the model will automatically select the function with the highest confidence interval (minimum expected error).

Outlying data will be determined by identifying abrupt changes of three or more standard deviations from a trend identified by a prediction function.

Steep changes in trends will be tracked by searching for patterns of successively larger than expected deviations from the trend. If necessary, the curve will be divided into two or more functions by the model.

If analysis of the combined runs yields a significant change in the NPA exhaust prediction results, a new COCUS report could be issued to industry (guidelines permitting) along with all the supporting data and model results.

During the transition phase for the COCA functions, as historical data is entered into the COC Database, Mitretek data analysts will determine the best set of prediction functions and data weighting functions to use for the model. Once the model comes on line, the operation will be automatic and will provide early warning of any unexpected condition within the numbering system.

The features of the Mitretek forecasting system that directly enhance the NPA exhaust prediction process are summarized in the following table:

Quality/Capability	Feature	Application to Jeopardy
Appropriate historical data	Consistent, nationwide database. Continuous updating of assignment and new entrant data. Continuous running of forecast model.	More accurate forecast of exhaustion. More timely forecast of potential jeopardy situations.
Flexible prediction functions	Use of linear, higher order polynomial, and exponential functions.	Ability to model non-linear growth trends. More advance warning of explosive growth.
Identification of outlier data points	Use of automatic methods to detect data points more than three standard deviations from the trend.	Reduces false alarms and overreaction to one-time events versus trends.
Identification of changes in trends	Ability to use different prediction functions for different portions of a historical time line.	Early identification of an ever-increasing growth trend.

Question 12

Section 5.0 - Mitretek has chosen to decentralize its Central Office Code Administrators.

a) How will Mitretek ensure consistency in assignment procedures among the Central Office Code administrators?

Answer:

The basic procedures for CO code assignment are contained in the INC guidelines, which must be followed by all administrators. Mitretek has proposed an information systems approach to improving the productivity and consistency of the CO code assignments. A single national database will hold consistent information about CO codes, dialing plans, and available resources nationwide. Each COCA will have access to the same tools and data at the workstation, regardless of its location. This, coupled with common training and procedure manuals will provide a consistency that was never before achievable in the industry.

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- [redacted]
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b) Please provide a more detailed explanation of the rationale used by Mitretek in selecting the specific cities for the regional COCA offices.

Answer:

[redacted]

- [redacted]
- [redacted]

[redacted]

Answers to Written Questions

[redacted]

[redacted]

[redacted]

Question 13

Section 5.0 - If the West has the most need for NPA Relief Planning over the next 2 years, why is it the last region to be transitioned?

Answer:

Mitretek recognizes that the specific transition of CO Code Administration functions, including code administration and NPA relief planning, will be determined in close coordination with the NANC's COCA Transition Planning Working Group. Mitretek's ordering of the CO Code Administration Centers implementation was determined primarily in an attempt to minimize the impact on NPA relief planning activities already underway. The schedule of CO Code Administration Center starts, contained on proposal pages 347 through 351 are:

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Question 14

Section 5.0 - The respondent references and places great weight on the numbering experience it can provide, and particularly on the experience of specific individuals who will be part of the new NANP Administration or its subcontractors. What assurances can the respondent provide that these individuals, as well as other experienced personnel, will remain on the staff of the new NANP Administration over the initial five year contract period?

Answer:

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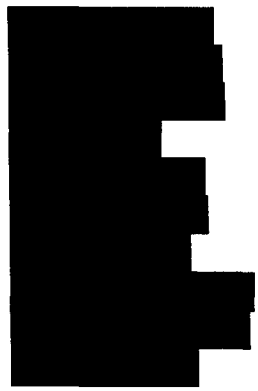

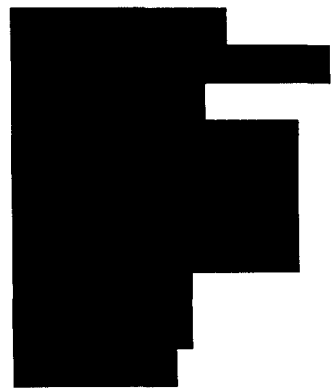

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Question 15

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Identification of changes in trends	Ability to use different prediction functions for different portions of a historical time line.	Early identification of an ever-increasing growth trend.

Question 16

Section 9.4, Page 329 - Mitretek's proposes the use of four NANP Administrators, a Group Leader, and four Data Analysts. Please substantiate why this number of personnel is required for the NANP administration functions.

Answer:

[redacted]